

### Supplementary TABLE 3. mAECs response to influenza virus.

A) 100 most up and downregulated DEGs in mAECs infected with influenza virus

Gene symbol	Entrez gene name	Probe	Fold change
IFNB1	interferon, beta 1, fibroblast	A_51_P144180	669.91
SLFN12	schlafen family member 12	A_51_P183812	422.58
CXCL11	chemokine (C-X-C motif) ligand 11	A_52_P676403	374.53
CCL5	chemokine (C-C motif) ligand 5	A_51_P485312	172.77
IFIT2	interferon-induced protein with tetratricopept	A_52_P542388	155.17
GM4955	predicted gene 4955	A_52_P326187	140.64
CXCL10	chemokine (C-X-C motif) ligand 10	A_51_P432641	137.75
RSAD2	radical S-adenosyl methionine domain contain	A_51_P505132	130.73
GBP4	guanylate binding protein 4	A_51_P463562	127.8
CCL5	chemokine (C-C motif) ligand 5	A_52_P638459	126.39
IFIT2	interferon-induced protein with tetratricopept	A_51_P161021	125.63
RSAD2	radical S-adenosyl methionine domain contain	A_52_P670026	119.33
GM12250	predicted gene 12250	A_52_P164821	116.63
SLFN12	schlafen family member 12	A_51_P228768	111.84
IRG1	immunoresponsive 1 homolog (mouse)	A_51_P123625	97.18
IFI44L	interferon-induced protein 44-like	A_51_P327657	91.56
GVIN1	GTPase, very large interferon inducible 1, pse	A_52_P661713	90.41
SLFN5	schlafen family member 5	A_51_P364694	89.22
SAA1	serum amyloid A1	A_51_P337308	87.43
IFI44L	interferon-induced protein 44-like	A_51_P327651	78.36
GM1966	predicted gene 1966	A_52_P431615	77.48
CYP3A43	cytochrome P450, family 3, subfamily A, poly	A_51_P489367	72.8
IFIT3	interferon-induced protein with tetratricopept	A_52_P663686	69.3
C10RF161	chromosome 1 open reading frame 161	A_51_P460748	68.26
CXCL9	chemokine (C-X-C motif) ligand 9	A_51_P461665	67.71
IFNA16	interferon, alpha 16	A_51_P355829	66.28
GBP6	guanylate binding protein family, member 6	A_52_P189772	66.27
OASL	2'-5'-oligoadenylate synthetase-like	A_51_P437309	64.01
IFIT3	interferon-induced protein with tetratricopept	A_51_P359570	60.02
IFNA1	interferon, alpha 1	A_52_P482280	59.25
OAS3	2'-5'-oligoadenylate synthetase 3, 100kDa	A_51_P472867	58.27
IIGP1	interferon inducible GTPase 1	A_51_P387239	56.22
SLFN1	schlafen 1	A_52_P425890	55.89
IL28B	interleukin 28B (interferon, lambda 3)	A_52_P254088	53.99
IFIT1	interferon-induced protein with tetratricopept	A_52_P294064	53.18
SPRR2D	small proline-rich protein 2D	A_51_P435588	51.34
IFIT1	interferon-induced protein with tetratricopept	A_51_P500082	50.05
TRIM30	tripartite motif-containing 30	A_51_P275454	49.69
SLC26A4	solute carrier family 26, member 4	A_51_P224164	49.4
TRIM79	tripartite motif-containing 79	A_52_P199633	46.89
CFB	complement factor B	A_51_P413866	46.64
GBP5	guanylate binding protein 5	A_52_P327664	45.78

SAA2	serum amyloid A2	A_52_P318673	44.29
AI607873	expressed sequence AI607873	A_51_P325281	43.43
CMPK2	cytidine monophosphate (UMP-CMP) kinase 2	A_51_P400190	43.39
PYHIN1 (inc	pyrin and HIN domain family, member 1	A_51_P334785	41.73
IDO1	indoleamine 2,3-dioxygenase 1	A_51_P307150	41.04
C10RF161	chromosome 1 open reading frame 161	A_52_P12840	40.6
CMPK2	cytidine monophosphate (UMP-CMP) kinase 2	A_52_P186937	40.06
LOC66759;	cDNA sequence BC023105	A_51_P434737	39.64
ATP13A5	ATPase type 13A5	A_52_P607195	-37.4
PTGDR	prostaglandin D2 receptor (DP)	A_52_P292354	-27.94
CYP3A4	cytochrome P450, family 3, subfamily A, poly	A_52_P571006	-15.97
NTSR2	neurotensin receptor 2	A_52_P266686	-14.97
TREM2	triggering receptor expressed on myeloid cell:	A_51_P269546	-13.9
SLC6A15	solute carrier family 6 (neutral amino acid tra	A_52_P220440	-13.46
CCKAR	cholecystokinin A receptor	A_51_P307741	-13.28
TECTB	tectorin beta	A_52_P120813	-13.24
RSP01	R-spondin homolog (Xenopus laevis)	A_51_P142421	-13.19
CYP3A4	cytochrome P450, family 3, subfamily A, poly	A_51_P341203	-12.86
AKAP5	A kinase (PRKA) anchor protein 5	A_52_P1042732	-11.95
ATP13A5	ATPase type 13A5	A_52_P471979	-11.79
SOSTDC1	sclerostin domain containing 1	A_51_P392950	-11.01
RALYL	RALY RNA binding protein-like	A_52_P38011	-10.82
GPR155	G protein-coupled receptor 155	A_51_P497993	-9.81
OGN	osteoglycin	A_51_P295085	-9.76
UGT2A1	UDP glucuronosyltransferase 2 family, polypep	A_51_P510037	-9.48
FREM2	FRAS1 related extracellular matrix protein 2	A_51_P214503	-9.12
PDE1A	phosphodiesterase 1A, calmodulin-dependent	A_52_P46102	-8.4
FGG	fibrinogen gamma chain	A_51_P362176	-7.86
LOC626410	hypothetical protein LOC626410	A_52_P707795	-7.81
DEGS2	degenerative spermatocyte homolog 2, lipid c	A_51_P122649	-7.7
LRP2	low density lipoprotein receptor-related prote	A_52_P285470	-7.43
KITLG	KIT ligand	A_52_P572571	-7.32
SEC14L3	SEC14-like 3 (S. cerevisiae)	A_52_P339204	-7.31
CXCL12	chemokine (C-X-C motif) ligand 12	A_52_P685021	-7.07
ASPN	asporin	A_51_P142813	-7.02
FMO3	flavin containing monooxygenase 3	A_51_P269404	-6.94
SEC14L3	SEC14-like 3 (S. cerevisiae)	A_51_P243122	-6.92
FREM2	FRAS1 related extracellular matrix protein 2	A_52_P5491	-6.84
5430402P0	RIKEN cDNA 5430402P08 gene	A_52_P826044	-6.83
80304530;	RIKEN cDNA 8030453022 gene	A_52_P180359	-6.83
KCNH1	potassium voltage-gated channel, subfamily 1	A_51_P297850	-6.8
SEC14L3	SEC14-like 3 (S. cerevisiae)	A_52_P656455	-6.78
P2RX6	purinergic receptor P2X, ligand-gated ion cha	A_52_P478159	-6.77
SNTG2	syntrophin, gamma 2	A_51_P369998	-6.76
UGT2A1	UDP glucuronosyltransferase 2 family, polypep	A_52_P659163	-6.76

SLC16A12	solute carrier family 16, member 12 (monoca	A_51_P221031	-6.66
GATA2	GATA binding protein 2	A_51_P516625	-6.59
FAM13A	family with sequence similarity 13, member A	A_51_P329949	-6.52
RPRM	reprimo, TP53 dependent G2 arrest mediator	A_51_P278653	-6.49
9530051G	RIKEN cDNA 9530051G07 gene	A_52_P134796	-6.47
NKX2-8	NK2 homeobox 8	A_51_P517878	-6.41
D430019H	RIKEN cDNA D430019H16 gene	A_52_P97699	-6.38
GM10664	predicted gene 10664	A_52_P1037027	-6.37
C5ORF36	chromosome 5 open reading frame 36	A_51_P278136	-6.36
SLC2A3	solute carrier family 2 (facilitated glucose tra	A_52_P354744	-6.35
AKR1C3	aldo-keto reductase family 1, member C3 (3-	A_51_P256170	-6.32
6330403K	RIKEN cDNA 6330403K07 gene	A_51_P417251	-6

B) Common DEGs between influenza virus infected hAECs and mAECs

Gene symbol	Entrez gene name	Probe hAEC	Probe mAEC	hAEC	mAEC
IFNB1	interferon, beta 1, fibroblast	ILMN_1682245	A_51_P144180	435.41	669.91
CXCL11	chemokine (C-X-C motif) ligand 11	ILMN_2067890	A_52_P676403	818.57	374.53
CCL5	chemokine (C-C motif) ligand 5	ILMN_1773352	A_51_P485312	1090.61	172.77
CXCL10	chemokine (C-X-C motif) ligand 10	ILMN_1791759	A_51_P432641	1415.43	137.75
RSAD2	radical S-adenosyl methionine domain containi	ILMN_1657871	A_51_P505132	433.75	130.73
IRG1	immunoresponsive 1 homolog (mouse)	ILMN_1838319	A_51_P123625	28.31	97.18
IFI44L	interferon-induced protein 44-like	ILMN_1723912	A_51_P327657	76.77	91.56
GVIN1	GTPase, very large interferon inducible pseudo	ILMN_1668526	A_52_P661713	3.53	90.41
GBP6	guanylate binding protein family, member 6	ILMN_2121568	A_52_P344949	5.77	70.32
IFIT3	interferon-induced protein with tetratricopepti	ILMN_2239754	A_52_P663686	183.19	69.3
CXCL9	chemokine (C-X-C motif) ligand 9	ILMN_1745356	A_51_P461665	51.33	67.71
IFNA16	interferon, alpha 16	ILMN_1733136	A_51_P355829	7.14	66.28
OASL	2'-5'-oligoadenylate synthetase-like	ILMN_1674811	A_51_P437309	871.41	64
OAS3	2'-5'-oligoadenylate synthetase 3, 100kDa	ILMN_2184262	A_51_P472867	30.87	58.27
IL28B	interleukin 28B (interferon, lambda 3)	ILMN_1768900	A_52_P254088	305.36	53.99
IFIT1	interferon-induced protein with tetratricopepti	ILMN_1707695	A_52_P294064	90.39	53.18
SPRR2A (inc	small proline-rich protein 2A	ILMN_2211018	A_51_P435588	137.39	51.34
GBP5	guanylate binding protein 5	ILMN_2114568	A_52_P327664	69	45.78
CMPK2	cytidine monophosphate (UMP-CMP) kinase 2,	ILMN_1783621	A_51_P400190	44.44	43.39
IDO1	indoleamine 2,3-dioxygenase 1	ILMN_1656310	A_51_P307150	115.77	41.04
OAS1	2',5'-oligoadenylate synthetase 1, 40/46kDa	ILMN_1672606	A_51_P355267	42.87	37.66
MX1	myxovirus (influenza virus) resistance 1, inter	ILMN_1662358	A_51_P514085	13.92	35.08
IL17C	interleukin 17C	ILMN_1788109	A_51_P350005	190.51	34.54
MX2	myxovirus (influenza virus) resistance 2 (mou	ILMN_2231928	A_52_P614259	68.35	31.97
ISG15	ISG15 ubiquitin-like modifier	ILMN_2054019	A_52_P463936	289.69	31.11
CD274	CD274 molecule	ILMN_1701914	A_51_P248666	35.3	28.69
CCL20	chemokine (C-C motif) ligand 20	ILMN_1657234	A_51_P408595	38.87	27.85
IRF7	interferon regulatory factor 7	ILMN_2349061	A_51_P421876	16.14	25.56
GBP4	guanylate binding protein 4	ILMN_1771385	A_51_P165244	36.56	25.21
C10orf81	chromosome 10 open reading frame 81	ILMN_1757099	A_52_P492112	-26.99	23.67

HERC6	hect domain and RLD 6	ILMN_1654639	A_52_P679860	15.32	23.49
DUOXA2	dual oxidase maturation factor 2	ILMN_1791711	A_51_P365744	155.62	23.43
TMEM171	transmembrane protein 171	ILMN_1728009	A_52_P799815	97.07	22.08
SP100	SP100 nuclear antigen	ILMN_2284998	A_52_P127720	5.56	20.7
IFI44	interferon-induced protein 44	ILMN_1760062	A_52_P550858	16.48	20.43
DDX60	DEAD (Asp-Glu-Ala-Asp) box polypeptide 60	ILMN_1795181	A_51_P197910	10.65	18.4
OAS2	2'-5'-oligoadenylate synthetase 2, 69/71kDa	ILMN_1674063	A_52_P587071	44.29	18.11
CSF3	colony stimulating factor 3 (granulocyte)	ILMN_1697069	A_51_P317176	98.14	16.91
BST2	bone marrow stromal cell antigen 2	ILMN_1723480	A_51_P169693	14.69	15.48
IL18BP	interleukin 18 binding protein	ILMN_2334296	A_52_P577384	29.9	15.3
SLC5A1	solute carrier family 5 (sodium/glucose cotran	ILMN_1681526	A_51_P241863	-2.73	15.26
STAT1	signal transducer and activator of transcriptio	ILMN_1691364	A_52_P70255	15.66	14.91
IL4I1	interleukin 4 induced 1	ILMN_1659960	A_52_P410449	60.99	14.59
VNN1	vanin 1	ILMN_1674574	A_51_P424532	4.75	13.82
TNF	tumor necrosis factor	ILMN_1728106	A_51_P385099	51.18	13.11
GCG	glucagon	ILMN_1724396	A_51_P406253	7.2	12.99
ZBP1	Z-DNA binding protein 1	ILMN_1765994	A_51_P184936	3.32	12.38
SP110	SP110 nuclear body protein	ILMN_1672661	A_52_P512201	11.36	11.82
RNF213	ring finger protein 213	ILMN_2289093	A_51_P159503	8.79	11.8
MLKL	mixed lineage kinase domain-like	ILMN_1715863	A_51_P440535	18.31	11.72
DEGS2	degenerative spermatocyte homolog 2, lipid d	ILMN_1768772	A_51_P122649	-5.53	-7.7
KITLG	KIT ligand	ILMN_2341595	A_52_P572571	-2.18	-7.32
FMO3	flavin containing monooxygenase 3	ILMN_2344283	A_51_P269404	-28.53	-6.94
RPRM	reprimin, TP53 dependent G2 arrest mediator	ILMN_1665425	A_51_P278653	-28.82	-6.49
RGS9BP	regulator of G protein signaling 9 binding prot	ILMN_1675172	A_52_P659470	-2.65	-5.91
PPP1R3C	protein phosphatase 1, regulatory (inhibitor) s	ILMN_1736670	A_52_P30451	-18.03	-5.87
SERPINB7	serpin peptidase inhibitor, clade B (ovalbumin)	ILMN_1767685	A_51_P454782	11.21	-5.48
KLF15	Kruppel-like factor 15	ILMN_1683133	A_52_P64383	4.9	-5.46
LRRN1	leucine rich repeat neuronal 1	ILMN_1720511	A_51_P412966	-8.24	-5.04
METTL7A	methyltransferase like 7A	ILMN_1656285	A_52_P205695	-12.66	-5.02
GAS1	growth arrest-specific 1	ILMN_1772910	A_51_P157083	-17.83	-4.77
PHEX	phosphate regulating endopeptidase homolog,	ILMN_1668242	A_51_P468249	-11.78	-4.74
C8orf47	chromosome 8 open reading frame 47	ILMN_2135709	A_51_P330825	-9.17	-4.73
MAGIX	MAGI family member, X-linked	ILMN_1770102	A_51_P504214	-3.94	-4.56
SCGB3A2	secretoglobin, family 3A, member 2	ILMN_1670306	A_51_P303097	-2.08	-4.44
FXYD6	FXYD domain containing ion transport regulatc	ILMN_1768812	A_51_P490247	4.98	-4.43
GSTA5	glutathione S-transferase alpha 5	ILMN_1788122	A_52_P458682	-13.11	-4.38
FAS	Fas (TNF receptor superfamily, member 6)	ILMN_2319077	A_52_P73385	3.28	-4.37
CYBRD1	cytochrome b reductase 1	ILMN_1712305	A_51_P509530	-12.02	-4.29
DCLK1	doublecortin-like kinase 1	ILMN_2165354	A_51_P193036	-7.43	-4.19
NTF3	neurotrophin 3	ILMN_1809364	A_52_P525161	3.08	-4.18
TMEM37	transmembrane protein 37	ILMN_1670672	A_51_P401987	-52.09	-4.09
C1QTNF5	C1q and tumor necrosis factor related protein	ILMN_1744487	A_52_P121192	-10.43	-4.09
C7orf49	chromosome 7 open reading frame 49	ILMN_1740903	A_52_P654565	-2.13	-3.87
SLC25A12	solute carrier family 25 (mitochondrial carrier,	ILMN_1788053	A_52_P971776	-2.98	-3.71

CYP4B1	cytochrome P450, family 4, subfamily B, poly	ILMN_1659215	A_51_P118704	-3.4	-3.69
ARHGAP25	Rho GTPase activating protein 25	ILMN_1777998	A_51_P248629	10.34	-3.64
SULT1A1	sulfotransferase family, cytosolic, 1A, phenol-	ILMN_1656900	A_51_P321341	-4.04	-3.48
ZBTB44	zinc finger and BTB domain containing 44	ILMN_2080637	A_52_P144286	-6.01	-3.38
CYP4F3	cytochrome P450, family 4, subfamily F, poly	ILMN_1736190	A_51_P238094	-5.11	-3.31
MGP	matrix Gla protein	ILMN_2071809	A_51_P426270	-5.12	-3.25
KLHL13	kelch-like 13 (Drosophila)	ILMN_2140510	A_51_P521304	-19.37	-3.22
RAB40B	RAB40B, member RAS oncogene family	ILMN_2230566	A_52_P167357	-10.21	-3.2
PAQR7	progesterin and adipoQ receptor family member	ILMN_1746618	A_51_P430973	-2.23	-3.17
SAT2	spermidine/spermine N1-acetyltransferase fan	ILMN_1746883	A_51_P498152	-5.51	-3.17
TMEM14A	transmembrane protein 14A	ILMN_1785191	A_52_P339154	-4.44	-3.15
HTR2B	5-hydroxytryptamine (serotonin) receptor 2B	ILMN_1735764	A_51_P200388	7.63	-3.12
C1orf158	chromosome 1 open reading frame 158	ILMN_1733298	A_51_P139349	-15.1	-3.09
CYFIP2	cytoplasmic FMR1 interacting protein 2	ILMN_2354478	A_52_P359745	-37.24	-3.09
ADCK3	aarF domain containing kinase 3	ILMN_1731064	A_51_P221651	-13.09	-3.08
OSBPL6	oxysterol binding protein-like 6	ILMN_1756935	A_52_P359958	-5.36	-3.08
SPHK1	sphingosine kinase 1	ILMN_2357134	A_52_P400436	17.32	-3.07
NME4	non-metastatic cells 4, protein expressed in	ILMN_1800634	A_51_P164203	-2.52	-3.06
GPAM	glycerol-3-phosphate acyltransferase, mitochc	ILMN_2178855	A_51_P471819	-9.98	-3.04
ARHGEF6	Rac/Cdc42 guanine nucleotide exchange factc	ILMN_1803423	A_52_P290020	-4.46	-3.04
TST	thiosulfate sulfurtransferase (rhodanese)	ILMN_1691572	A_51_P430082	-3	-3.02
C7orf41	chromosome 7 open reading frame 41	ILMN_1672605	A_51_P218910	-30.94	-2.93
CD83	CD83 molecule	ILMN_2328666	A_51_P199135	51.92	-2.93
WFDC5	WAP four-disulfide core domain 5	ILMN_2079042	A_51_P190509	7.03	-2.91
SCNN1A	sodium channel, nonvoltage-gated 1 alpha	ILMN_1713995	A_52_P139395	-7.13	-2.91